THE FARMER & GARDENER

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American Farmer Establishment.

BALTIMORE: TUESDAY, JUNE 27, 1837.

We are indebted to some zealous friend of agriculture for a communication, through the post office, giving a description of Mr. Heathcoat's steam plough, which we would publish with great pleasure, but that several months since we inserted a more full account of it. We are nevertheless equally indebted to the gentleman, who enclosed it to us, for his good intentions, and here beg him to receive in return our most grateful acknowledgments.

We acknowledge with pleasure a present from the author, of a copy of "The Western Address Directory," compiled and written by Mr. Wm. G. Lyford. In taking a rapid view of this work we have been very forcibly struck with its great value to all business men, and especially those who trade with the west. Besides containing the cards of merchants residing in Pittsburg, Wheeling, Zanesville, Portsmouth, Dayton, Cincinnati, Madison, Louisville and St. Louis, it has many highly interesting historical, topographical and statistical sketches. The work is well gotten up, and comprises a mass of information of the very first importance, and we sincerely hope its widely extended patronage may compensate its indefatigable author for the skill, industry and talents he has displayed.

We regret to find by a recent number of the "*Silk Worm*," that that excellent little periodical is to be discontinued. It was an able and safe co-adjutor in the cause of the silk culture, and was "commenced by the editor, not with any speculative view of profit to himself," but from "a patriotic desire, bordering on enthusiasm, to aid in introducing and forwarding a delightful branch of industry, which he was confident would be of greater benefit to the nation than any other." It was to have been hoped that motives so laudable, when backed by talents and industry such as were exerted by our old friend Blydenburgh would have secured for his work a generous patronage, but we are sorry to find by his notice that its publication will be arrested for want of support. This is the more to be regretted, and will awaken the greater surprise, when it is considered in connection with the fact that there never was a period when the silk culture had a greater number and more zealous friends than it has at present. There are some things inscrutable to human observation, and among these we rank the discontinuance, for the cause set forth, of so useful and spirited a work as that of the Silk-Worm. It has been said with great point and beauty of thought, that the battle is not always to the strong,—and surely, had it not been so, the intelligent editor in question would not be compelled, by force of circumstances, to retire from a field where his usefulness has been so manifest.

SPRING WHEAT.

A gentleman in Virginia, who purchased a small quantity of spring wheat, with a view of testing its adaptation to his latitude, last spring, writes the following encouraging account of it. The opinion of his neighbors, is, that it will yield from 16 to 18 to 1 of the quantity sown, and what is somewhat remarkable, be ready to cut before his winter wheat. Should these opinions be realised, the facts suggested will prove of deep moment, and go far to render the spring variety of wheat a deserved favorite with agriculturists. Early in the spring, we procured a quart of Italian spring wheat, which we sowed in our yard, but it became so rank that it lodged and we were compelled to cut it down; it has, however, grown up again, and is now heading out very beautifully, and looks as if it would make us a generous return. Subsequently to the sowing of this little experimental patch, we procured through a friend a barrel of the same variety of wheat, which we sowed on an acre and three quarters of land, and we are happy to say that it promises well. As it was late before we obtained it, it is not so forward as our fall sown grain, but from present appearances, we apprehend no fears of its making a liberal yield.

We were not so fortunate with our experiment on "*Skinless Oats*" as our Virginia correspondent, for although we sowed half a bushel, not a kernel of it vegetated, and we were forced to convert the ground it occupied into a potato patch; but as we are not apt to yield to disappointments, and God knows we have had our full share of them through life, we shall try again next year, when we hope our perseverance will be rewarded.

Extract from a letter to the editor, from an esteemed correspondent residing in Virginia, dated June 19th, 1837.

"The spring wheat I purchased in the spring is very promising. I sowed it about the last of March, in red clay soil, and although we had in April several weeks of very dry and unfavourable weather, it has escaped the fly and produced a luxurious growth; it is now in head, and I think will be ready to cut before any of my winter wheat. My neighbors, to whom I have shewn it, think it will yield 80 or 90 lbs. 5 lbs. was the quantity sown. I purchased at the same time a pint of Skinless Oats—sowed it about the same time; it came up badly, only here and there a stalk—I think, however, I shall get about a quart, which I hope will have become acclimated, and will vegetate better."

PROGRESS OF THE SILK CULTURE IN VIRGINIA;

OR, THE BELLONA ARSENAL CONVERTED INTO A COCOONERY.

We publish in another column a very interesting communication from a distinguished citizen of Virginia, describing the *Bellona Arsenal*, situated on the *James River*, about 12 miles above Richmond, which it is contemplated to convert into a *Cocoonery* for the feeding of silk worms, the general government, with a liberality worthy of all praise, having generously bestowed the use of the establishment with a view of promoting the culture of silk. From the description of the buildings, we are inclined to believe that they are competent to accommodate from 8 to 10,000,000 of worms, and from its proximity to Richmond, whither the requisite labor can be annually drawn, at little expense and trouble, we think the location a most happy one for making an enlarged experiment—such an one as, should it be conducted, as it doubtless will be, upon proper principles, will establish not only the practicability of the culture, but its highly profitable character, to the satisfaction of every intelligent and well judging mind.

The project, it appears from the communication of our correspondent, was conceived by Captain *Thos. Mann Randolph, of Goochland* county, and although we are an entire stranger to that gentleman, we take this occasion to tender to him the unfeigned homage of our thanks, and in the sincerity of our heart to wish him entire success. The enterprise, in which he has so laudably engaged, is one that the most gifted sons of Virginia, in her best days, might well be proud of; for it is one, which if pursued with energy and mind, must lead to results that will place the high-souled state that gave birth to Washington where she ought to be—first in the confederacy. Should this enterprise succeed,—and nothing but wilful mismanagement can prevent it—who can estimate the benefits which must result to Virginia? Who can form at present any thing like a calculation, or an approximation to one, of the value of the silk she is destined to produce in twenty years from this period? The grounds attached to the Bellona Arsenal are in the whole 27 acres; these, if properly planted are competent to produce mulberry foliage sufficient to feed as many millions of worms, when the trees, if planted in hedge form, shall have arrived at the age of 20 years—at 5 years old they will afford foliage for the support of half that number of worms. Indeed, should the morus multicaulis be planted, we believe that at two years old they would yield sufficient leaves per acre to feed half a million of worms. Let us submit these data to the test of figures. The house accommodations are equal to the raising of 10,000,000 of worms; the ground to the production of food for 27,000,000 at the expiration of 20 years, and under the contingency we have named, of 13,500,000 in two years.

If 27,000,000 of worms should be fed, the product would be as follows. As 3000 worms will make 1 lb. of silk, so will 27,000,000 make 9000 lbs. Now let us see how would stand the account of debit and credit:

9000 lbs. of Silk at $4,		$36,000
Deduct		
Expenses on the culture and feeding, $155 per acre, on 27 acres,	$4,185	
Loss by death of worms, say 20 per cent.	7,200	
		11,385
Profit on 27 acres, supposing each acre capable of feeding a million of worms,		$24,615

Now let us suppose that each acre will only feed half that number of worms, and how stands the account? Why we will have a net profit of half the above sum, viz. $12,307 50 cts.

Allowing the capacity of the grounds to be equal to the feeding of 10,000,000, and we have the result thus:

As 3,000 worms will make 1 lb. of silk, so will 10,000,000 make 3,333⅓ lbs.

3,333⅓ lbs. of silk at $4 per lb. is		$13,333 33⅓
Deduct		
Expense on 27 acres at $155 per acre,	$4,185 00	
Loss by death of worms, say 20 per cent.	2,666 66⅔	
		6,851 66⅔
Profit on 27 acres supposed to be capable of feeding 10,000,000 worms,		$6,481 66⅔

If then, we should take either of these calculations as our guide, there is still profit enough left to satisfy any reasonable mind. For ourself, while we hold the last to be too low, we honestly believe the first to be attainable by good management and care. But suppose two crops of worms should be fed as our correspondent intimates, and what would be the result? Why double the profit. And what, we would ask, would there be to prevent a second feeding? The foliage producible upon the 27 acres, we hold to be more than adequate to the feeding of either number of worms, so that while the surplus leaves would be being fed out to the second crop, those trees which were stripped during the first feeding, would be putting out and maturing a second crop of leaves, to meet the demand, when those which had been unconsumed in the first instance were exhausted. We are not the advocate of second cropping, when the supply of leaves are merely competent to the demand of the number of worms to be fed, but in this case, holding as we do that a surplus would exist, we can see no possible objection to such a course; on the contrary, we believe that great pecuniary benefit would arise from it, without any injury being done to the trees.

We have thus spoken of the profits exclusively growing out of the feeding of the worms alone, without saying any thing concerning the sale of mulberry trees, which in such an establishment would be very heavy. If prosperous, its prosperity would give increased zeal to the friends of the culture, and multiply them in all directions, so that besides the profit springing from the silk, a very handsome revenue would accrue from the sale of trees, inasmuch as the Bellona Arsenal, under its new destiny, could not fail to become, to a very large extent, the nursery of all the surrounding country whence to draw their supplies.

To the Editor of the Farmer and Gardener:

As the country is much indebted to your exertions for advancing the culture of Silk, I have thought that some account of an enterprize now on foot, for engaging in that branch of industry, might not be unacceptable.

A gentleman of Goochland, capt. Thomas Mann Randolph, has just obtained from the general government the use of the Bellona Arsenal, situated on James River, about 12 miles above Richmond, for the prosecution of this business. The arsenal was built during the administration of President Monroe; but has within a few years past been abandoned by government, on account of the inconvenience of its locality, for a repository of arms. The buildings are of a most extensive and commodious description, and are perhaps as well adapted to the purposes of a cocoonery, as if they had been erected expressly for that object. They are also, as may be supposed, constructed of the most durable materials. The principal building is one hundred feet long by thirty feet wide in the clear, containing besides the basement and the garret, three stories of those dimensions, each of about 12 feet pitch. There is also another building of the same size, but divided into a number of apartments. Besides these, there are six other houses of considerable size; and two neat pavilions, which were formerly the residences of the officers of the garrison. The whole number, with the court enclosed, occupy about two acres of ground; and the public lands amount to twenty-five acres more.

It will readily be perceived that this situation may be converted into one of the most extensive cocooneries in the country. And it is worthy of remark, that the government has acted with commendable liberality, in placing it in possession of a private individual, on the terms it has done. Being desirous of promoting the culture of silk as far as its legitimate powers may extend, it exacts no charge for the use of the lands and buildings; and gives the assurance that there is no probable contingency, which will render its re-occupancy by the government, necessary for a number of years.

The number of worms which may be fed in such an establishment, it may be difficult to determine with any degree of exactness. In Count Dandolo's cocoonery, he fed 800,000 in a room seventy-seven feet long by thirty in width. In one of the rooms, therefore, in the main building, at Bellona, at least a million may be accommodated—making for the three stories, three millions in one house. In the other houses there is ample space for as many more; amounting in the whole to six millions, and if more than one crop can be raised, which appears to be the opinion of many intelligent silk culturists, the double of that number may be fed in a single season. No land can be better adapted to the growth of the chinese mulberry; and any additional quantity may be obtained on desirable terms.

It is understood that the business will be one of individual enterprize. Intimations have been received, that if it was intended to form a company, the stock would be taken without any difficulty. In connection with the cocoonery, an extensive nursery for the propagation and supply of the *Morus Multicaulis* on reasonable terms, will be formed: and by the end of the next year, a hundred or a hundred and fifty thousand plants, will probably be in readiness to stock the grounds, and supply in part, the demand for the mulberry.

Yours with respect, ——— ———.

Chesterfield, Va. 14th June.

BUIST'S EXOTIC NURSERY—*Philadelphia.*

While on a visit a few weeks since at Philadelphia, we called at the above excellent establishment, and were in doubt which most to admire, the splendid collection of plants, or the unaffected gentlemanly deportment of its intelligent proprietor. It has been our intention ever since, to give, in our plain way, a description of the establishment, but the press of our business has hitherto prevented us, the which our readers will

have no cause to regret, as in the one which follows they will find much more justice done to it than we have vanity enough to suppose ourself capable of rendering.

[From the Magazine of Horticulture.]

R. Buist's Exotic Nursery—Since the spring of 1835, the time of our last visit to this place, Mr. Buist has erected a camellia house and a small stove. The former is about 50 feet in length and 20 in width, and is built with a slope to the north instead of the south, as is usual in the erection of all similar structures. We are glad that Mr. Buist has adopted this method: the camellia has now become so popular a flower, and the varieties are so numerous, that there will probably soon be erected houses exclusively for their cultivation; and we would here suggest to those gentlemen who intend to build such, the propriety of constructing them with a slope to the north. The camellia will not flourish in a house exposed to the direct rays of the sun; and it would be certainly preferable to grow them in a house facing the north, where they do not fall but an hour or two in the middle of the day, and then so obliquely as to destroy all their power, than in ordinary ones, where the plants always require to be shaded, to prevent them from being scorched. The flowers also remain in perfection a greater length of time, and the air of the house is not kept in such a continual state of aridity, which is very injurious to the well doing of the plants. We noticed that Mr. Buist has the camellias placed at a good distance from the glass; this we much approve of: we know from our own personal experience that camellias, placed upon a stage near the glass, rarely make a healthy growth, and, when growing in small pots, the continual variation of the state of the soil is extremely prejudicial to their health. No plants will bear growing at a greater distance from the glass than camellias.

The interior of this house is constructed with a front shelf, about four feet in width; between this and the back border is the walk. In the border are planted out several camellias at various distances, and the space between them is filled with plants in pots. The front shelf was filled with azaleas and other plants, which prefer a cool temperature and shady situation. Of camellias Mr. Buist has a considerable number; but his stock is, just at this time, very much reduced. We observed but very few large plants; these have been mostly purchased by amateurs making collections of this splendid flower, who are zealous to procure strong and well furnished plants. Mr. Buist has raised one very fine seedling, which he is now propagating as fast as nature and art will allow, so as to possess a stock before he lets it go out. It is a white flower, well formed, with a distinct red stripe through the centre of each petal; another seedling was just showing color, and promised to be a white one. [Since these remarks were written we have learnt that it has expanded, and that it is a double white of surpassing beauty, equal, if not superior, in elegance, to the old double white, and only to be appreciated from an actual inspection of the flower. This is saying considerable in its favor; but we see no reason why a seedling equally as good as the double white should not be obtained in this country as well as by the Chinese: there can be no doubt but that it was by mere accident that this fine old variety, as well as all the double Chinese ones, was produced.] We shall give a correct description of it when we shall have become acquainted with its character. Mr. Buist has three seedlings, raised by J. B. Smith, esq. of this city; the names are Philadelphia, Ne plus ultra, and Pennsylvania; of their respective colors and merit we have no knowledge, but have learnt that they are very fine. Mr. Buist is propagating them as fast as possible. We found several kinds in bloom; among others, C. j. var. glòria múndi, Ròssi, *Ròsa* múndi, *aucubæfòlia*, coccínea, compácta, Goussònia; fúlgens is a very showy red one, with a large flower and loose petals; Fairlèa, a pretty red, faintly touched with white; Vandèsia is nearly the color of corállina, but the flower is much larger—it is a fine deep red, elegantly blotched and touched with pure white, and the contrast between the two colors is most striking. One called ròsea, so received from England, and which Mr. Buist has designated China, to distinguish it from the common ròsea or Middlemist's, is an exceedingly neat flower, full as double as the myrtifòlia, but of a lighter color. Fasiculàris of the French, and Wiltòni of the English, Mr. Buist informed us, were one and the same thing. To our judgment, a flower of the latter, open here, appeared identical with fasiculàris, which we had a short time previous seen at Mr. Wilder's; it is a pretty variety. Wiltòni, of some English collections, appears to be another variety; large plants which have flowered both at Mr. Wilder's and in our garden, have shown no appearance of white in the flowers. Palmèri álba and candidíssima, both in this collection, are said to be fine white ones. Mr. Buist's camellias look very strong, and in excellent health. In this house we also noticed two new azaleas in bloom; one was the A. indica var. Gillinghámi, and the other phœnícea èlegans; each have rosy purple flowers, very large, and in abundance, and are most valuable additions to the green-house or conservatory.

In the stove we found a variety of plants, and a good stock of the Cliánthus puníceus, Benthámia fragiféra, Russelia júncea, and Manéttia glàbra; of Beaumóntia grandiflòra, Ixòra bandùcha, Lantàna Sellòwii, Calàdium bicolor, and some other new things, there is also a good stock; of that elegant stove climber, Ipomœà Horsfállæ, Mr. Buist possesses a few plants. We here saw some of the pitcher plants, Nepenthes distillatòria, which Mr. Buist had raised from seed; they were bearing a few minute little pitchers, which were extremely curious. We hope the plants will be kept alive, and increased under Mr. Buist's care, and shall expect to see them introduced into all hothouses. Of Dionœà muscípula we observed a good stock; the plants are procured in abundance in their native localities at the south, and are intended for transportation to England, where they are extremely rare.

In the old range of houses the plants look vigorous and healthy. There has been a great number of new plants added during the past two years; and it is impossible for us, from our very limited visit, to mention but few of the most rare and beautiful of these: *Mímulus* cardinàlis, (see p. 181,) Lechnaúltia, formòsa, beautiful; Fúchsia sp. var. grandiflòra, raised by the Messrs. Young, of Epsom, and said to be splendid; Pimelèa decussàta, charming; Lophospérmum cærùleum; Gardoquìa Hookèri, exquisite; Gloxínia álba; Tacsònia pinnatistípula, very elegant; Ceanòthus azùreus; Clívia nóbilis, &c. &c. Mr. Buist's stock of heaths is very much reduced; plants of *E.* rùbida only were in bloom. Many new calceolarias have been added; some of them, we suspect, if true, very superb: this is a tribe of plants possessing great beauty, and deserving of general cultivation: no plants more enliven a green-house throughout the spring and summer than the different new varieties which have now become so numerous.

In geraniums, Mr. Buist has added most of the fine ones, such as Dennis's Perfection, &c.; the plants of these sorts are small and not yet in bloom. In roses there has been an accession of many fine varieties; among others, is a shrubby mimulus, which, Mr. Nutall states, surpasses all others; some of the Calochorti seeds, and a few of them are probably the same plants that were sent to England by Mr. Douglas. A cactus, believed to be the *C.* nóbilis *L.*, was just beginning to grow; and several other plants, one of a singular habit, throwing out long stolones; their names cannot be ascertained until they bloom. Many of the seedling plants will bloom the coming summer, and among them some beautiful things are looked for.

Mr. Buist is now doing a very extensive business, principally with the south, where, with a mild climate, a great part of what are with us green-house plants flourish as well in the open air as the common hardy shrubs of our gardens. The great expense attending the erection of structures for plants, in the Middle and Eastern States, is a great obstacle to so rapid an increase of floricultural taste as would otherwise take place. It is beyond the means of many persons, who have a great love for flowers and shrubs, to indulge in it to any extent, from the high price of labor, and the expense attending the construction of suitable green-houses, &c.; and it is therefore to hardy shrubs and plants that we should direct our attention. By a judicious selection of these, and the introduction of all that are sufficiently hardy for our climate, the beauty of the garden may be enhanced in a two-fold degree to what it is at present; in particular, hardy herbaceous plants are much neglected, and it would give us great pleasure to see them enriching the borders and parterres of gardens, now barren of beautiful flowers, or filled with such as are scarcely worth growing from their inferiority.

Mr. Buist has now engaged Mr. Scott, late of Knight's Exotic Nursery, King's road, Chelsea, England, to take the charge of his establishment. The business concerns of his nursery have become so extensive, that he has, personally, very little time to devote to the propagation and cultivation of plants. Under the skill of Mr. Scott, the rarest and most difficult plants to propagate will be increased to supply all demands.

Fine Fruit—We were a few days since indebted to the polite attention of Wm. B. Everett, esq. for a dish of remarkably fine hautboys, of superior size and flavor. We measured some, which were nearly three inches in circumference, and weighed over a quarter of an ounce.—*Kent Bugle.*

INDIAN CORN.

AN ESSAY ON INDIAN CORN

DELIVERED BY

PETER A. BROWNE, Esq. L. L. D.

Professor of Geology and Mineralogy in Lafayette College, Pa. Professor of Geology in the Cabinet of Natural Science in Montgomery county; member of the Geological Society of Pennsylvania; and corresponding member of the Cabinet of Natural Science of Chester county, Pennsylvania, read before the latter Society, April 22, 1837.

ZEA MAYS. "Maize" or "Maiis." "Indian Corn" or "Indian Wheat." "Blé ou Bled de Turquie ou d' Inde" (French.) "West India Corn" (Spanish.) "Lenehasquem" (Lenni Lennape.) "Melomin" (Chipeway.)*

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* 1. Z. MAYS, 1. *Leaves Lanceolate, keeled, entire.* Willd. Sp. 4. p. 200.

Vulgo—*Corn. Indian Corn. Maize.*

Root *annual.* Culm *6 to 8 or 10 feet high, and an inch to an inch and a half in diameter, simple, (often producing suckers, or branches, at base), noduse, semiterete, or with a broad channel on one side, smooth, solid with pith. Leaves* lanceolate, acuminate, nerved, keeled, 2 to 3 feet long, and 2 to 4 or 5 inches wide, smooth beneath, pubescent on the upper surface, ciliate on the margin: *sheaths* striate, smooth, conspicuously pubescent along the margin; *ligule* short, obtuse, slightly pubescent and ciliate. *Staminate Flowers* in terminal paniculate racemes. *Spikelets* somewhat unilateral on the branches, mostly in pairs, one subsessile and the other pedicellate, each 2-flowered. *Glumes* herbaceous, nerved, pubescent, the lower a little longer. *Paleæ* 2 to each floret, nearly equal, membranaceous, ovate-oblong, obtuse, subdentate and ciliate at apex.—*Anthers* greenish yellow. *Scales* collateral, cuneate, truncate, fleshy and smooth. *Pistillate Flowers* in solitary, axillary, sessile spike, (1 to 3 or 4—usually about 2 of these spikes, or Ears—on each plant). *Spikes* enveloped in spathe-like convolute sheaths,—the outer or lowest of these sheaths (being the one next the culm) thin and membraneous, with two keels. *Spikelets* 2-flowered, arranged in longitudinal series on a cylindrical spadix, or receptacle, 6 to 12 inches long,—the series or rows, always in pairs: *florets* sessile, the lower one abortive. *Glumes* 2; the lower one rather shorter, very broad, deeply imarginate, or somewhat 2-lobed, ciliate, the upper one suborbicular. *Abortive floret* with 2 paleæ; the lower one orbicular, embracing the fertile floret, the upper one shorter, with the margin inflexed. *Fertile floret* with two or three palæ; the lower one suborbicular, the upper one very broad (or somes 2). *Ovary* smooth, obovoid, obtuse or rounded, compressed at base. *Style* very long, filiform, projecting beyond the sheaths, pendulos, often purple: *Stigma* pubescent, bifid. *Seed* compressed, orbicular reniform, or cuneate, often indented at apex, sitting transversely on the cylindric or conic receptacle, and partially imbedded in sockets formed by the persistent glumes and paleæ.

Hab. *Cultivated fields: common.* Fl. *July—August.* Fr. *Sept.—October.*

Obs. There are several *Varieties* of this plant,—with the seeds *yellow, white,* or sometimes *dark purple;* and one which is smaller, and comes sooner to maturity. I have also seen a singular variety, in which every seed on the receptacle appeared to have its own husk, or spathe-like covering, in addition to the general envelope. The Indian Corn is one of the most interesting of the *Gramineæ*—rivalling the *Sugar Cane*, and the *Rice*, in intrinsic value,—and, in this region at least, ranking next in importance to *Wheat* itself. It is universally cultivated here, being generally the first in the routine of the crops, in breaking up the Lay, or sod. The *seed* is planted early in May. No other species of the genus is known in the United States.—[DARLINGTON.]

The word "Zea" is borrowed from the ancient Greek word "Zao," "to live," the seeds contributing eminently to the support of life. †It is rendered in Latin "triticum," (wheat,) and "hordium," (barley,) from which it is inferred, that in its original it meant "*grain*" only. In like manner in English the word "corn," which is derived from the Saxon "corn," and the German "Korn," includes "*all* seeds that grow on *ears*, and not in *pods*, and that are made into bread." "Corn," in political economy and commerce, is synonymous with "bread stuffs." All the British statutes regarding *grain*, are called "*corn* laws." The words blé and bled in the French, and the word "Trigo" in the Spanish language, correspond with the word "*Zea*," as thus explained. Blé was also the Norman name for corn.‡

The class Zea is divided into two orders. 1st. Zea mays. 2d. Zea curagua.§

The Zea belongs to the 19th class of plants called Monœcia (one house,) because the plants of this class have imperfect flowers, the stamens and pistils growing on the *same* plant, but on separate corollas.

The *orders* of this class are determined by the numbers of styles and pistils. The Zea mays belongs to the third order "Triandria," three stamens.

In the natural orders it is arranged under the 4th "Gramina;" family "Cerealia," Cerealis, any grain from which bread is made, from "Ceres," the goddess of corn.

In books of horticulture it is ranged under "culmiferous crops."

Some writers call the Zea mays a "gigantic grass." Col. Taylor of Virginia, speaking of deep ploughing, calls it "a little tree."

It is generally ranked as the third grain, in point of utility, by European writers; they placing before it, rice and wheat; but in the United States it takes precedence of all other grains.

I propose to treat of this valuable plant under the following heads, viz:

I. To what country did it originally belong?—Is it a native of America?

II. Where is it now cultivated?

III. How much is raised in the United States?

IV. Of the varieties of Indian Corn.

V. Which kind is to be preferred?

VI. The capacity it has of retaining its germinating power?

VII. The methods of cultivating it.

VIII. Is the Indian corn capable of being improved by culture?

IX. Its cultivation compared with other grains.

X. The different uses to which it is applied.

I. To what country is the world indebted for this valuable plant?

Is it a native of America?

I state the above as two distinct questions, for it might be that the Indian corn was indigenous to different countries. But it was no apprehension that the Indian corn had been a native of any other part of the world that induced me to make the suggestion.

Not to trouble the reader with the numerous other writers who have dwelt upon this subject, I will remark that in "Lieber's Encyclœpedia *Americana*," published in 1831, it is stated, that "the native country of the Indian corn remains *still undetermined.*" If this be the fact, is it not high time that the question were decided? I believe that there is on record information enough to put it forever at rest; and mine has been the task to collect and collate it. It is not meet that a nation, who (to use the words of Col. Taylor,) have lived "*in it*," and almost "*upon it*," for upwards of two hundred years should be unable to tell their children whether the Indian corn is a native or exotic plant. It is a reflection upon, not only the learned, but the mass of the community, that their great *staple commodity*—the plant that demands and receives the patronage, the skill, and the industry of a large agricultural part, of a great agricultural nation, should be so imperfectly known. It is no longer to be tolerated, that a crop—which has not been too strongly described, as the *meal, meadow*, and *manure* of the American farmer, should be treated with such neglect, that in a scientific work, published in our own days, and in our own country, it should be represented as "an *unknown*," whose native country is undetermined.

I have therefore taken extraordinary pains to ascertain its history, and after I have given the details, it will be found very easy to pronounce, to what portion of the globe the rest of the world are indebted for the Indian Corn.

I propose to divide this part of the subject into the following heads of inquiry.

1. Has the Indian corn been mentioned by any Greek or Roman writer?

2. Has any traveller, *prior to the discovery of America*, noticed the culture of Indian corn in any other part of the world?

3. If it is not a native of America, whence was it derived and *when* transplanted?

4. Was it known to and used by the aboriginal inhabitants of the West India Islands, and of South and North America before, or at the time of, their being first visited by Europeans?

5. What is the general opinion of learned persons upon its origin?

6. Are there any recent discoveries that will bear upon this subject?

A few words on these questions in their order.

1. Has the Indian corn been mentioned by any Greek or Roman writer?

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† Darlington.

‡ Kelham's Norman Dictionary.

§ Reese's Cyclopœdia.

This point has been conceded by the author of the article quoted from Lieber's Encyclopædia Americana, and in so doing he has done no more than was required of him at the hands of truth and candour. The "corn" which the disciples of our Saviour plucked and eat on the Sabbath, as they went through the corn fields, was not *Indian* corn; for in Luke vi. i. the disciples are represented at *rubbing* the *ears* in their *hands* to get at the grains, an operation which would have succeeded with wheat and other small grains, but which was altogether inapplicable to Indian corn.

Pliny speaks of a certain dish much used and admired by the ancient Romans, called "*alica*," which was made of Zea. "Alica fit e Zea quem semen appellavimus." But "Zea" here means "spelt," or according to some, "beer barley" or "beer corn." See Ainsworth's Lat. Dict. which cites Pliny.

2. Has any traveller, *prior to the discovery of America*, noticed the culture of Indian corn in any other part of the world?

It is well known that, previously to the discovery of America, many intelligent travellers visited China, India, and other parts of Asia, as well as Africa; that some of these have been very minute in their descriptions of the vegetable productions of these countries; yet it is not pretended that any one of them has mentioned the cultivation of Indian corn. This universal silence upon the subject furnishes negative testimony, *at least*, and negative testimony of the strongest character, that the Indian corn was then an unknown plant.

It can hardly be supposed, if the Indian corn had been growing in those countries, that it would have escaped the notice of travellers; and this negative testimony is strengthened by the circumstances, that immediately *after* the expiration of a sufficient length of time from the discovery of America, to have enabled the curious to have transplanted the productions of this hemisphere to other parts of the world, we find intelligent foreign travellers employing their time in describing the Indian corn and its mode of culture. I have among my notes numerous instances of this class, which I forbear to press upon the reader.

3. If the Indian corn is not a native of America, *whence* was it derived, and *when* was it introduced in America?

Is it not a great objection to the proposition that the Indian corn was introduced into America from another part of the world, that no two writers agree *whence* it was originally derived. One asserts that it was brought from India, supposing it to have been introduced through Persia to Africa; another says that it originated on the western coast of Africa, &c. In like manner are these writers at fault, when the *time* when it was introduced into America is required to be known. We will presently see the reasons of this discrepancy as to the *place* from which the Indian corn is supposed to have been brought, and total inability to shew *when* it was transplanted into the Americas. But these reasons will serve for any thing better than to shew that it was not a native of this country.

4. Was the Indian corn known to the aborigines of any portion of this hemisphere, and of those portions in the order in which they were first visited?

Hispaniola was one of the first of the West India Islands known to Europeans: it was discovered in 1492, by the Spaniards, before they had seen the continent; and therefore I shall commence with the Spanish West Indies. That the Indian corn was found in these Islands is proved by the following:

The Spanish word for *Corn*, used as a generic term, and also for "wheat," according to Delphini, is "*trigo*," which is derived from the Latin "*triticum*."* But the Spaniards use the word "mays," which they define to be "*West India corn*."

Again. In Jos: de Acosti's Natural History of the West Indies, lib. 4. ch. 16, p. 236, speaking of the mays, he calls it "Indian wheat, to make "bread of. He says that it was the only grain "FOUND in the West Indies by the Europeans:— "that it grows upon a long reed with large grains, "and sometimes two ears on a reed, on one of "which seven hundred grains have been told:— "that they sow it grain by grain and not scatter- "ing, as is done with wheat; and it requires a "hot and moist soil. There are two sorts of it, "(says our author,) one large and substantial, the "other small and dry, which they call '*moroche*.' "The leaves of it and also the reed are very good "food for cattle, green; and dry, it serves as well "as straw. The grain is better for beasts than "barley, but they must drink *before* they eat it; "for if they drink *after* it, it swells and gives "them pain. The Indians eat it hot, boiled, and "call it '*mote*,' and sometimes toasted. There "is a sort of it large and round, which the Span- "iards eat toasted; they also grind it and make "cakes, which they eat hot; and these, in some "places, they call '*arepas*.' They also make "bread, to keep, and sweet cakes of it. The In- "dians make drink of it, as done with barley; this "they call in Peru '*azua*,' and in most other parts "'*chica*;' it is very strong. They have also a "way of extracting *oil* from it which is good, and "serves instead of butter and olive oil." This writer spent nearly his whole life, which was a long one, in America.

The South American continent was discovered in 1498, and in Robertson's History of America, speaking of the agriculture of the aborigines of that country, it is said, "The chief thing raised "was *maize*, known in Europe by the name of "'Turkey' or '*Indian*' wheat, a grain extremely "prolific, of simple culture, agreeable to the taste, "and affording a strong healthy nourishment."

The Mexicans held in great veneration a goddess who presided over the *maize*, whom they called "To-na-cay-ohu-a," which means "She who feeds us." To her they consecrated the first fruits of the earth, as the Heathens did to Ceres.

The first account we have of any *French* navigator being on the American coast was in 1504. This nation endeavoured to effect the planting of a colony in Canada in 1584, but did not entirely succeed till 1608. M. Charlevoix, who wrote the earliest and most authentic history of Canada, which was then called "*La Nouvelle France*," in describing the culture of the earth there in 1721 says, "Outre que le grain, dont ce peuple font "usage, sont des grain d' été, on pretend, que la "nature du Terroir de ce pays-ci, ne permet pas "d' y rien semer avant l' Hyver. Mais je crois "que le veritable raison pourquoi les grains ne "pousseroient pas, si en les semoit automne, c'est "qu'ils se gateroient pendant l' Hyver, ou qu'ils "pourriroient á la fonte des neiges. Il se peut "fair aussi, et c'est l' opinion de plusieurs, que le "froment, qu'on recueille en Canada, quoiqu' ori- "ginairement venu de France, ait contracte avec "le tems la propriete des grain d'ete qui n'ent pas "assez de force pour poussea plusieur fois, come "il arrive á ceaux, que nous semons en September "& en October.

"Les feves, (ou plutôt) les feveroles se sement "avec le *maize*, dont la tige leur sert d'appui: Je "crois avoir oüi dire que c'est de nouis, que le "sauvages ont reçu ce *legume*, dont ils font grand "cas & qui ne differe effectivement en rien de nô- "tre."

This author is so anxious to assert that it was from the French that the Canadians received the feveroles, and claims nothing of the kind for the maize; the inference is irresistible that the latter was found in this country.

In his 3d v. p. 168, in giving an account of the plants belonging to Canada 'particulière au pays') he has enumerated "Le maïz ou Bled de Torquie."*

M. Charlevoix tells us also that in 1564, when M. Landonnie arrived in Florida, the natives presented him and his party with *Indian corn meal*. "Des farines de maïz."

When the first effectual settlement was made in Virginia, in 1607, that country from the sea coast to the mountains and between the Potomac and the James Rivers, was occupied by upwards of 40 tribes of Indians, of which the most powerful were the Powhatans, the Mannahocs, and Manacans; and we have the authority of Mr. Jefferson for asserting, that when the English first visited them, they found them using the Indian corn. Whether it was of *spontaneous* growth or was by cultivation, is not stated; but most probably (says Mr. J.) it was a *native* of a more southern climate, and was handed along the continent from one nation to another of the savages.—*Notes on Virginia.*

As has been said before, the French setfled in Canada in 1608, and six years afterwards the Dutch possessed themselves of New York. The British colonists did not arrive at New England until the year 1620. At the time above mentioned, these Europeans found five Indian nations, viz. the Mohawks, the Oneodoes, the Oriondagoes, the Cayugas and the Sennekas, joined together by a league and confederacy, possessing an immense district of the American continent, reaching from the Atlantic to the Lakes. The Aridondacks, another tribe lived in Canada. The 'Five Nations' affected to think themselves a superior race to all the rest of mankind;—they called themselves '*Onguehonwe*,' which means 'men surpassing all others.' The white men were anxious to be made acquainted with the history of these nations previously to the Europeans coming among them; which having been related by the chiefs, and preserved [Colden's History of the Five Nations, London 1747,] will shed some light upon the

* Which is rendered, "wheat" and "barley."

* Lettre X. written in April, 1721.

question under discussion. It commences in this way: "The Aridondacks formerly lived 300 "miles above Trois Riviere, where now the Uta- "wawas are situated; at that time they employ- "ed themselves wholly in hunting, and the Five "Nations made *planting of corn* their business. "By these means they became mutually useful to "each other by exchanging *corn* for venison.— "But a war broke out between the Five Nations "and the Aridondacks, in which the former were "the conquerors. *Soon after this*, (says this tra- "dition,) the French arrived at Canada and set- "tled at Quebec."

Carver, the celebrated English traveller, who traversed upwards of 5,000 miles of the interior of North America, tells us that the Ottagaumies, the Saukees, and all the eastern nations, were found *growing Indian corn*.

But Dr. Benj. Smith Barton places the LENNI LENNAPE at the head of the column of North American Indians, and they are generally acknowledged to have been of more ancient establishment in the country than many others.*— Their tradition was, that they were formerly a very powerful people, inhabiting the country to a great distance westward and along the sea shore east and south. The great extent to which their language was spoken, gives countenance to this tradition. Besides this the tribes along the Mississippi called the Delawares their 'grand-father.' Of all the Indian nations which formerly inhabited this country from Massachusetts to the Mississippi and between the Ohio River and the Canada Lakes, none but the five nations and the Delawares had a right to call a general council. It also appears from an inspection of Indian vocabularies that the language of the Lenni Lennape could be traced beyond the Canadian Lakes, on the North and in the South, among the Pampticoughs, who formerly inhabited North Carolina and Sawaranoo, who lived in Georgia, and even to South America, [Barton,] Massachusetts, Connecticut, Monongahela, Alleghany, Muskingum, Savannah, Mississippi, and Missouri, are all derived from the language of the Lenni Lennapes.

Now every thing which these Indians considered as *original* or *native* among them, they distinguished with the word "Lenni" placed before it; the oak and hickory they called "Lenni Hittuck," the original or *native* trees; the chub fish was original and common in all their rivers and brooks; they called it "*Lennameek*," the *original* fish: they called themselves the Lenni Lennape, the *original* people; and the *Indian corn* they called "Lenchasquem," "the ORIGINAL GRAIN," thereby declaring their opinion that it was a *native* of their country.

Peter Kalm professor of economy in the University of Aobo, in Swedish Finland, and member of the Swedish Royal Academy of Science, travelled in America in 1748 and '49, and in a work which he afterwards published, speaking of the Indians of North America, he says: "Their "food is very different from that of the inhabi- "tants of other parts of the world. Wheat, rye, "barley, oats and rice, were quite unknown to "them. *Maize*, some kind of beans and mel- "ons, made up almost the whole of Indian gar- "dening."—2d vol. p. 95.

"At first the Swedes settled in New Jersey and "Pennsylvania were obliged to buy *maize* of the "Indians for sowing and eating."—p. 111.

"The Indians had their little *plantations* of "*maize* in many places, before the Swedes came "into this country."—p. 114.

"Before the Europeans came to this country, "the Indians *planted maize*, beans and gourds." —p. 192.

Peter Kalm was a pupil of Linæus, and a good botanist, and therefore his evidence is very creditable upon this subject. He died in 1778, sixteen years after Linæus published his second, and 25 years after he published his first edition of his Species Plantarum.

"In a work entitled "The British empire in America, containing the history of the discovery, settlement, progress and state of the British colonies in the continent and islands of America," 2d ed. London, 1741, vol. 1. p. 184,—the author says, speaking of New England, "Oats, barley, peas, beans, and all other sorts of advantageous grains, are cultivated and flourish here; but the *Indian corn* is most planted. There was no other corn in this country before the English came hither." I shall here insert the account of it given to the Royal Society, by Mr. Winthrop, who was a member. "The natives called it Wiachin, and in some southern parts of America it is known by the name of maiis or maize. The ear is a span long, composed of eight rows of grain, or more, according to the goodness of the ground; about 80 grains in a row. It is of various colors, as red, white, yellow, blue, olive, greenish, black, speckled, striped, and sometimes in the same field and in the same ear. The stalk grows six or eight feet high; that of New England is not quite so tall as Virginia, and at Canada it is shorter than in New England," &c.

At page 185, he says, "The Indians thrash it as they gather it, and dry it well on mats in the sun, and bury it in holes in the ground, lined with moss or mats, which are their barns."

At page 186, he says, "The Indians boil it until it becomes tender, and eat it with fish or venison, instead of bread: sometimes they bruise it in a mortar and so boil it. The most usual way is to parch it in the ashes, stirring it so artificially as to be very tender without burning. They beat it in a mortar and sift it into a fine meal, which they eat dry or mixed with water. The English mix it into a stiff paste and make bread of it, which they bake all day or at night. The best sort of food which is made of it is called samp," &c.

No Indian corn grows wild *now;* but both that and the kidney bean were found among the natives. The Indians have a tradition that the first grain of corn was brought hither by a blackbird, and the first bean by a crow.

In page 327, speaking of Calvert's first establishment in Maryland, the writer says, "The infant colony supplied themselves with Indian corn at Barbadoes, which, at their first arrival, they began to use to save their English store of meal and oat meal. The Indian women perceiving that the servants of the English did not know how to dress it, made their bread for them, and taught them to do it for themselves. There was Indian corn enough in the country, and these new adventurers soon after shipped off 10,000 bushels for New England to purchase salt fish and other provisions."

In page 428, speaking of the mode of living in Virginia, he says, "The bread which the better sort of people use, is generally made of wheat, the poorer eat *pone*,* made of *oppone*, or Indian meal."

At page 441, speaking of the productions of Virginia, he says, "The Indians had pease, beans, and potatoes, before the English came among them; but the staff of their food was *their corn*, of which we have given a large description in the history of New England."

(To be Continued.)

*The British called them "the Delawares," and the French, "Les Loups."

*This name is still preserved in the South, where a "pone bread" means of *Indian corn* bread.

HORTICULTURE.

[From Loudon's (London) Gardener's Magazine.]

On the Systems of cropping Kitchen Gardens adopted by the best private and commercial gardeners; with an attempt to reduce them to fixed principles. By W. D. S.

The subject of cropping the ground in kitchen gardens embraces the preparation of the soil, the insertion of the seeds or plants, their after-culture, the gathering of the crop, and the system according to which one crop is made to succeed another. As the discussion of all these points, however, would involve the repetition of what is already well known to every gardener, the article now submitted to the reader, and for which his indulgence is entreated, is limited to what is properly called cropping, or the succession of crops. Crops in kitchen gardens, are put in the ground according to three distinct plans or systems, which may be termed successional cropping, simultaneous cropping, and permanent cropping.

Successional cropping is that in which the ground is wholly occupied with one crop at one time, to be succeeded by another crop, also wholly of one kind: for example, onions to be followed by winter turnips, or potatoes to be followed by borecole.

Simultaneous cropping, is that in which several crops are all coming forward in the ground at the same time: for example, onions, lettuce, and radishes, sown broadcast; or peas, potatoes, brocolo, and spinach, sown in rows.

Permanent cropping is where a crop remains on the ground several years; such as sea-kale, rhubarb, asparagus, strawberries, &c.

To these modes might be added, *mixed ligneous and herbaceous cropping*, such as growing herbaceous crops among gooseberries, currants, raspberries, and other fruit shrubs, and among fruit trees. The practice of growing culinary crops among fruit shrubs is, however, nearly exploded in the best gardens, on account of the injury done to the shrubs when they are young and small, by the roots and shade of the culinary crops, and of the injury done to the culinary crops when the shrubs are grown up, by the shade and confinement which they produce.

For the same reasons, cropping between trees is by no means desirable in small gardens, where the trees must necessarily be at no great distance from each other; but in the case of very large gardens, such as those of commercial gardeners, where trees are planted in close rows at 20, 30, or 40 yards apart, so as to shelter the ground, the cropping may be carried on in the spaces between rows of trees, on the principles which regulate successional, simultaneous, or permanent cropping, in ground where there are neither trees or shrubs.

The object to be attained by a system of cropping is that of procuring the greatest quantity and the best quality of the desired kind of produce, at the least possible expense of labor, time, and manure; and, in order that this object may be effectually obtained, there are certain principles which ought to be adopted as guides. The chief of these is to be derived from a knowledge of what specific benefit or injury every culinary plant does to the soil, with reference to any other culinary plant. It ought to be known whether particular plants injure the soil by exhausting it of particular principles; or whether, as has been lately conjectured by De Condolle, and, as some think, proved, the soil is rendered unfit for the growth of the same or any allied species, by excretions from the roots of plants; while the same excretions, acting in the way of manure, add to the fitness of the soil for the production of other species. The prevailing opinion, as every one knows, has long been, that plants exhaust the soil, generally, of vegetable food, particularly of that kind of food which is peculiar to the species growing on it for the time being. For example: both potatoes and onions exhaust the soil generally, while the potato deprives it of something which is necessary to insure the production of good crops of potatoes, and the onion of something which is necessary for the reproduction of large crops of onions. According to the theory of De Condolle, both crops exhaust the soil generally, and both render it unfit for the repetition of the particular kind of crop; but this injury according to his hypothesis, is not effected by depriving the soil of the particular kind of nutriment requisite for the particular kind of species; but by excreting into it substances peculiar to the species with which it has been cropped, which substances render it unfit for having these crops repeated. Both these theories, or rather, perhaps, hypotheses, are attended with some difficulty in the case of plants which remain a great many years on the same soil; as, for example, perennial-rooted herbaceous plants and trees. The difficulty, however, is got over in both systems: by the first, or old theory, the annual dropping and decay of the foliage is said to supply at once general nourishment and particular nourishment; and by the second, or new theory, the same dropping of the leaves, by the general nourishment which it supplies, is said to neutralize the particular excretions. It must be confessed that it is not very obvious how general nourishment, dropped on the surface of the soil, can neutralize the excrementitious matter deposited many feet beneath the surface; as in the case of long rooted herbaceous plants, like the saintfoin, lucerne, &c.; and deep rooting trees, such as the oak, &c. Nevertheless, we find that these plants will remain a longer period on the same soil than others, the roots of which never go to any great depth beneath the surface; such as the fibrous-rooted grasses, the strawberry, &c., and the pine and fir tribe. We mention these things to show that, though it is not yet determined which is the true theory, yet that the fact of plants injuring or diminishing the fertility of the soil, both generally and particularly, does not admit of a doubt.

In the absence of principles founded on whichever of these hypotheses may be true, recourse is obliged to be had to rules drawn from the experience and observation of those who believe in the old theory. These rules, as adopted by the best gardeners, are as follows:

Crops of plants belonging to the same natural order or tribe, or to the natural order and tribe most nearly allied to them, should not follow each other. Thus, turnips should not follow any of the cabbage tribe, sea-kale, or horse-radish.

Plants which draw their nourishment chiefly from the surface of the soil should not follow each other, but should alternate with those which draw their nourishment in great part from the subsoil. Hence, carrots and beets should not follow each other; nor onions and potatoes.

Plants which draw a great deal of nourishment from the soil should succeed, or be succeeded by, plants which draw less nourishment. Hence, a crop grown for its fruit, such as the pea; or for its roots or bulbs, such as the potato or the onion, should be followed by such as are grown solely for their leaves, such as the common borecole, the celery, the lettuce, &c.

Plants which remain for several years on the soil, such as strawberries, rhubarb, asparagus, &c. should not be succeeded by other plants which remain a long time on the soil, but by crops of short duration; and the soil should be continued under such crops for as long a period as it remained under a permanent crop. Hence, in judiciously cropped gardens, the strawberry compartment is changed every three or four years, till it has gone the circuit of all the compartments; and asparagus beds, sea-kale, &c., are renewed on the same principles.

Plants, the produce of which is collected during summer, should be succeeded by those of which the produce is chiefly gathered in winter or spring. The object of this rule is, to prevent too active and exhausting crops from following each other in succession.

Plants in gardens are sometimes allowed to ripen their seeds; in which case two seed-bearing crops should not follow each other in succession.

These rules, and others of a like kind, apply generally to the three different systems for the succession of crops; and they are independent altogether of other rules or principles which may be drawn from the nature of the plants themselves; such as some requiring an extraordinary proportion of air, light, shade, moisture, &c.; or from the nature of the changes intended to be made on them by cultivation, such as blanching, succulency, magnitude, &c. We shall now notice the different systems separately.

Successional Cropping.—The plants best calculated for this mode of cropping are such as require, during almost every period of their growth, the fullest exposure to the light and air; and as remain, also, a considerable time in the soil: these are, the turnip, the onion, the potato, the beet, the carrot, &c. If any of these crops are raised and brought forward under the shade of others, they will be materially injured both in quality and quantity; though, at the same time, while they are merely germinating, shade will not injure them. Hence, successional cropping may be carried on in breadths of 20 feet or 30 feet, between rows of tall-growing articles, without injury; which approximates this manner of cropping to the simultaneous mode, which, wherever the soil is rich, is by far the most profitable.

The simultaneous mode of Cropping is founded on the principles, that most plants, when germinating, and for some time afterwards, thrive best in the shade; and the tall-growing plants, which require to receive the light on each side, should be sown, or planted, at some distance from each other. Hence, tall-growing peas are sown in rows 10 feet or 12 feet apart; and between them are planted rows of the cabbage tribe; and, again, between these are sown rows of spinach, lettuce, or radishes, &c. Hence, also, beans are planted in the same rows with potatoes or with cabbages, (an old practice in the cottage gardens of Scotland;) and so on. The great object in this kind of cropping is, to have crops on the ground, in different stages of growth; so that, the moment the soil and the surface are released from one crop, another may be in an advanced state, and ready, as it were, to supply its place. For this purpose, whenever one crop is removed, its place ought to be instantly supplied by plants adapted for producing another crop of the proper nature to succeed it. For example, where rows of tall marrowfat peas have rows of broccoli between them, then, the moment the peas are removed, a trench for celery may be formed where each row of peas stood; and between the rows of broccoli, in the places where lettuces were produced early in the season, may be sown drills of winter spinach.

[For the Farmer and Gardener.]

A correspondent wishes to know how the requisite space for a given number of silk worms, as described in the various works on the culture of silk, is to be determined? It is stated for instance that during the 5th age, an ounce of eggs, producing 30,000 worms, will require 184 feet. Is this the superficial extent of the whole number of shelves combined—or is it the superfices of the apartment in which they are to be fed? In the former case, each worm will have less than *one square inch* allotted to it, which is perhaps less than the space it would cover, &c. &c.

Answer—It means the superficial extent of the shelves on which the worms are fed; but instead of computing the ounce of worms at 30,000, it should be estimated at 20,000, making allowances for deaths by sickness, casualties, &c.—*Editor Farmer and Gardener.*

The Crops—Since the late rains, the weather has been more favorable to vegetation than heretofore, and the wheat and rye have in consequence improved somewhat. Oats generally came up badly, owing to the ground being too wet when they were sowed; what are on the ground however, look healthy and flourishing.

Centreville Times.

BALTIMORE PRODUCE MARKET.

☞ *These Prices are carefully corrected every* MONDA

	PER	FROM	TO
BEANS, white field,	bushel.	1 50	1 75
CATTLE, on the hoof,	100lbs	7 50	9 00
CORN, yellow	bushel	92	94
White,	"	90	96
COTTON, Virginia,	pound	—	—
North Carolina,	"	—	—
Upland,	"	10	13½
Louisiana 20a21-Alabama	"	—	—
FEATHERS,	pound.	50	52
FLAXSEED,	bushel.	1 37	1 50
FLOUR & MEAL—Best wh. wh't fam	barrel.	—	—
Do. do. baker's	"	—	—
	"	—	—
Super How. st. in good de'd	"	8 75	9 00
" " wagon price,	"	—	—
City Mills, super	"	8 00	8 25
" extra	"	8 50	9 00
Susquehanna,	"	9 00	—
Rye,	"	6 00	—
Kiln-dried Meal, in hhds.	hhd.	—	—
do. in bbls.	bbl.	—	—
GRASS SEEDS, red Clover,	bushel.	6 00	6 50
Timothy (herds of the north)	"	3 00	3 50
Orchard,	"	—	3 00
Tall meadow Oat,	"	—	2 75
Herds, or red top,	"	—	1 25
HAY, in bulk,	ton.	12 00	18 00
HEMP, country, dew rotted,	pound.	6	7
" water rotted,	"	7	8
HOGS, on the hoof,	100lb.	6 50	6 75
Slaughtered,	"	—	—
HOPS—first sort,	pound.	9	—
second,	"	7	—
refuse,	"	5	—
LIME,	bushel.	32	35
MUSTARD SEED, Domestic, —; blk.	"	3 50	4 00
OATS,	"	—	51
PEAS, red eye,	bushel.	—	—
Black eye,	"	1 12	—
Lady,	"	—	—
PLASTER PARIS, in the stone,	ton.	2 85	—
Ground,	barrel.	1 62	—
PALMA CHRISTA BEAN,	bushel.	—	—
RAGS,	pound.	3	4
RYE,	bushel.	85	90
Susquehannah,	"	—	none
TOBACCO, crop, common,	100 lbs	2 50	3 00
" brown and red,	"	3 50	5 00
" fine red,	"	8 00	10 00
" wrappery, suitable for segars,	"	10 00	20 00
" yellow and red,	"	8 00	10 00
" good yellow,	"	8 00	12 00
" fine yellow,	"	12 00	16 00
Seconds, as in quality,	"	—	—
" ground leaf,	"	—	—
Virginia,	"	4 50	9 00
Rappahannock,	"	—	—
Kentucky,	"	—	—
WHEAT, white,	bushel.	1 60	1 70
Red, best foreign,	"	1 50	1 65
Maryland inferior	"	1 00	1 25
WHISKEY, 1st pf. in bbls	gallon.	36	37
" in hhds.	"	35	do
" wagon price,	"	bbls	—
WAGON FREIGHTS, to Pittsburgh,	100 lbs	1 25	—
To Wheeling,	"	1 50	—
		washed.	unwash
WOOL, Prime & Saxon Fleeces,	pound.	50 to 60	30 32
Full Merino,	"	45 50	26 30
Three fourths Merino,	"	40 45	24 26
One half do	"	36 40	22 24
Common & one fourth Meri.	"	33 36	20 22
Pulled,	"	36 38	24 26

A JENNET FOR SALE.

THE subscriber has for sale a JENNET of good size and unexceptionable pedigree. She is 13 years old, and warranted sound. As her owner is desirous of selling her a bargain will be given in her. Applications made in writing must be post paid, to EDW. P. ROBERTS,
sp 25 Baltimore, Md.

BALTIMORE PROVISION MARKET.

	PER.	FROM.	TO.
APPLES,	barrel.	—	—
BACON, hams, new, Balt. cured	pound.	—	12½
Shoulders, do	"	—	10
Middlings, do	"	do	do
Assorted, country,	"	8½	9
BUTTER, printed, in lbs. & half lbs.	"	25	—
Roll,	"	16	20
CIDER,	barrel.	—	—
CALVES, three to six weeks old	each.	5 00	7 00
COWS, new milch,	"	25 00	40 00
Dry,	"	9 00	12 00
CORN MEAL, for family use,	100lbs.	2 06	2 12½
CHOP RYE,	"	1 75	1 87½
EGGS,	dozen.	18	—
FISH, Shad, No. 1, Susquehanna,	barrel.	7 50	—
No. 2,	"	7 00	—
Herrings, salted, No. 1,	"	2 87	—
Mackerel, No. 1, —— No. 2	"	8 00	9 00
No. 3,	"	—	4 50
Cod, salted,	cwt.	3 00	3 25
LARD,	pound.	9	—

BANK NOTE TABLE.

Corrected for the Farmer & Gardener, by Samuel Winchester, Lottery & Exchange Broker, No. 94, corner of Baltimore and North streets.

U. S. Bank,	par	VIRGINIA.	
Branch at Baltimore,	do	Farmers Bank of Virgin.	2
Other Branches,	do	Bank of Virginia,	do
MARYLAND.		Branch at Fredericksburg	do
Banks in Baltimore,	par	Petersburg,	do
Hagerstown,	½a	Norfolk,	do
Frederick,	do	Winchester,	do
Westminster,	do	Lynchburg,	2½
Farmers' Bank of Mary'd,	do	Danville,	do
Do. payable at Easton,	1	Bank of the Valley,	2
Salisbury, 2 per ct. dis.		Branch at Romney,	2½
Cumberland,	3	Do. Charlestown,	2
Millington,	do	Do. Leesburg,	2
DISTRICT.		Wheeling Banks,	4
Washington, Georgetown, Alexandria, Banks,	½p.c.	Ohio Banks, generally	6a7
PENNSYLVANIA.		New Jersey Banks gen.	5
Philadelphia,	½a	New York City,	1
Chambersburg,	1	New York State,	3a4
Gettysburg	do	Massachusetts,	3a3½
Pittsburg,	3½	Connecticut,	3a3½
York,	1	New Hampshire,	3a3½
Other Pennsylvania Bks.	4	Maine,	3a3½
Delaware [under $5]	6	Rhode Island,	3a3½
Do. [over 5]	2	North Carolina,	6
Michigan Banks,	10	South Carolina,	8a10
Canadian do.	10	Georgia,	do
		New Orleans,	15

INTERESTING TO FARMERS.

HAVING procured the best machinist in Maryland, we are now ready to fill all orders entrusted to our care, for the following implements:——WHEAT FANS, STRAW CUTTERS and CORN SHELLERS, &c. all of which articles are made in superior style—They also manufacture GRAIN CRADLES warranted superior to any ever manufactured in Baltimore for cost of cutting, and saving of grain, being peculiarly adapted to the economy of force and labor.—PLOUGHS of all descriptions neatly got up. The public are invited to call and judge for themselves; the subscribers being confident that all persons competent to discriminate between the relative value of implements of husbandry, will give the preference to theirs. JOHN T. DURDING & CO.
je 27 4t Fronting Grant and Ellicott sts

GARDEN SEED.

THE subscriber has just received his general supply of fresh Garden Seeds from the Messrs. Landreth's of Philadelphia—those for retailing bearing their label and warranted. The Messrs. Landreths grow the most of the seeds they vend, and theirs is the oldest and probably the most extensive establishment in this country, and their seeds have no rival as to quality. Orders from country dealers will be supplied at short notice. Catalogues furnished gratis.

JONATHAN S. EASTMAN.
Feb. 14

LIME-SPREADER.

J. S. EASTMAN, PRATT-STREET,

Has now finished several of the above machines. The price is fixed as follows:

For the machine complete,	$100
Do exclusive of the wheels, shafts and axle,	60
For applying the machinery to a common cart	45
For the machinery alone	40
Including the patent fee in each case.	fe 28 3t

HARVEST TOOLS, &c.

Grain and Grass SCYTHES of most approved stamp. GRASS SNEATHES, with Scythes and Hangings complete; GRAIN CRADLES, 4 to 8 fingers, with warranted scythes attached; Dutch and American SICKLES; SCYTHE STONES and STRICKLES, for whetting Scythes, BRAMBLE SCYTHES and HOOKS, for cutting briars and bushes; Mowers' and Cradlers' Hammers, Hay and Grain RAKES, Steel spring HAY FORKS.

And constantly kept for sale, PLOUGHS of various patterns, Cultivators for corn and tobacco, Wheat Fans, common and patent CORN SHELLERS, Cylindrical and common STRAW CUTTERS, Drills Machines for planting corn, beans, turnip seeds, &c.

Also, a large assortment of Garden and Field Tools, embracing most sorts used in garden nurseries, &c.

For sale by ROBERT SINCLAIR, Jr. & CO.
june 6 4t

HAZELWOOD FEMALE ACADEMY,

FIVE MILES N. W. OF BALTIMORE.

This institution, situated a short distance from the village of Franklin, in a highly eligible and healthy location, will be re-opened for the reception of pupils, under the care and superintendence of Mr. and Mrs. THOMPSON, on Monday, the 12th of June.

In addition to the efficient aid already procured, in the various departments of Literature, Mr. and Mrs. T. can promise the patrons of the Institution, a regular series of LECTURES from the following eminent gentlemen, viz.

On Moral Philosophy, Francis Waters, D. D.
Natural Philosophy, J. H. Miller, M. D. } Professors in
Chemistry & Botany, Ed. Foreman, M. D. } Washington Medical College.
Exact Sciences, Richard Cotter, A. M. Professor of Mathematics in Boisseau Academy.
Polite Literature, S. W. Roszel, M. D., Principal of Boisseau Academy.

BOARD OF VISITORS.

Rev. Dr. Thomas E. Bond	David Stewart, esq Franklin st.
Rev. J. G. Morris,	
Charles F. Mayer, esq.	James Barroll, esq.
J. P. Kennedy, esq.	Jonathan Meredith, esq.
John Prentiss, President of Baltimore College	Nathaniel Williams, esq.

TERMS.

The Scholastic year will be divided into two sessions of five months each.

Board and tuition in the English and Latin languages, Mathematics, Moral and Natural Philosophy, Chemistry, together with the advantages of all the Lectures, (per session)	$100
French, Spanish and Italian, (each)	10
Music, Vocal and Instrumental,	30
Drawing (with materials,)	12
Washing and Bedding (if required)	15
Stationary at store prices.	

☞ The tuition fee will be due, and payable to the Institution, within the first four weeks of each session.

Any further information in reference to the above Institution, will be cheerfully given by Dr. ROSZEL, Boisseau Academy, St. Paul's street, or address Mr. and Mrs. Thompson, Hazelwood Academy, near Baltimore.
June 10—13 4t

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Thanks to a correspondent who communicated a description of Heathcoat's steam plough—notice of the Western Address Directory—do. of the discontinuance of the Silk Worm—do. of Spring Wheat—the Silk Culture in Virginia, estimates of profit—description of the Bellona Arsenal about to be converted into a cocoonery—notice of Buist's nursery—Professor Brown's essay on Indian Corn—interesting essay on the principles of gardening—query and answer relative to the space required for silk worms—the crops—advertisements—prices current.